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# TEACHING FOR EFFECTIVE LEARNING

a short guide for teachers of health auxiliaries

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Richard E Wakeford

Department of Medical Education  
University of Dundee, Scotland



# COMMUNITY HEALTH CELL

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## 1. INTRODUCTION

This book has been prepared for the World Health Organisation as part of a project to help teachers of health auxiliaries. Other parts of the project package are:

- selected reference books and
- a set of illustrations.

The purpose of this book is to give practical help and advice to Health Auxiliary Teachers as to how to use to best effect teaching materials at their disposal.

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### How might you use the materials?

Firstly, you might use the materials for your own reference, to assemble facts, figures, and information to improve your teaching.

Secondly, you may use the illustrations in your teaching generally, converting them to transparencies, for instance, to provide visual material for your lessons.

Finally, bearing in mind that most Health Auxiliaries whom you teach will be returning to relatively remote areas and will be without adequate sources of reference materials, much of your teaching ought to be geared to producing competent health workers and also to providing them with reference materials for their subsequent use. You might use the materials to do this.

### What are the aims of this book?

This book has one aim only: to help you train health auxiliaries better prepared to do their job. It attempts to encourage and help you, the teacher, to produce better educational materials and to help your students learn more effectively.

### How can this book help?

This book is not a 'cook book' collection of tricks, and neither is it a theoretical reference manual. It is somewhere between the two. It aims to give you an understanding of a few of the more helpful principles of teaching, and then to show you how they can help you to assist others to learn.

We will discuss these background principles and how to plan for effective learning, and then go on to consider some of the aids you might use to help you teach, including group discussions. Then, we'll think about evaluating your teaching and your students' learning and improving it even further.



Consider:

- likely ability of students
- level of education
- present level of knowledge in your subject
- social and cultural background
- motivation and interest

## 2: BEFORE YOU START

### Who are your students?

As with all teaching, before you start you must know something about the students you are going to teach.

What sort of person is your student? What is his ability and education, for instance? Is he used to studying? Obviously the kind of education your student has had, the level at which it has taken place and his general ability will influence to a great extent the length of your course, the sort of language you use, and so on.

What does your student know about the subject already? Obviously, if all your students are likely to know a large amount of the ground work, you can save yourself the trouble of teaching it to them. However, you must be sure that you know what the position is, and you may even need to test your students' level of knowledge before you start. But we shall come back to the whole subject of testing later.

Again, what prejudices and biases have your students? Are they all from one homogenous cultural background, or do they come from different ones? And how ought this to influence your teaching?

### What do your students want?

What has motivated your students to attend this course? Are they enthusiasts, training for a vocation? Or are your students possibly being paid to attend, having relatively little interest in the course? If it is the latter case, you are going to have to adopt a very stimulating approach indeed!





LEARNING OBJECTIVES state what students will be able to do as a result of your teaching

Objectives will help you organise and improve your teaching



What are you going to teach your students?

So you've thought about why your students will be coming on your course, you've considered their background, and, possibly even tested their knowledge. But what do you hope to do to help these students when they are on your course? What is it exactly that they will be able to do at the end of your course that they couldn't do at the beginning? In other words, what are the "learning objectives" of your course? Only by having clearly stated objectives can you decide how best to teach your students. But how are these 'objectives' derived?

In any event you will know what it is that your students hope to be doing at the end of the course. What job is it? What functions does this job involve? Get a piece of paper and write down your Student's ultimate functions in his job, ideally, with the help of some of your students.

But with or without assistance from students, try doing that now.

- DEFINE YOUR STUDENT'S ULTIMATE  
OVERALL TASK



- BREAK THIS DOWN INTO MAJOR  
COMPONENT TASKS
- SPECIFY CONDITIONS



Analysing what your student will be doing in his work.

What you are doing now is the first stage of an elementary 'task analysis', which is simply a way of specifying exactly what a worker does in his job. Knowing in detail what your students will actually be doing will enable you to produce the learning objectives for your course.

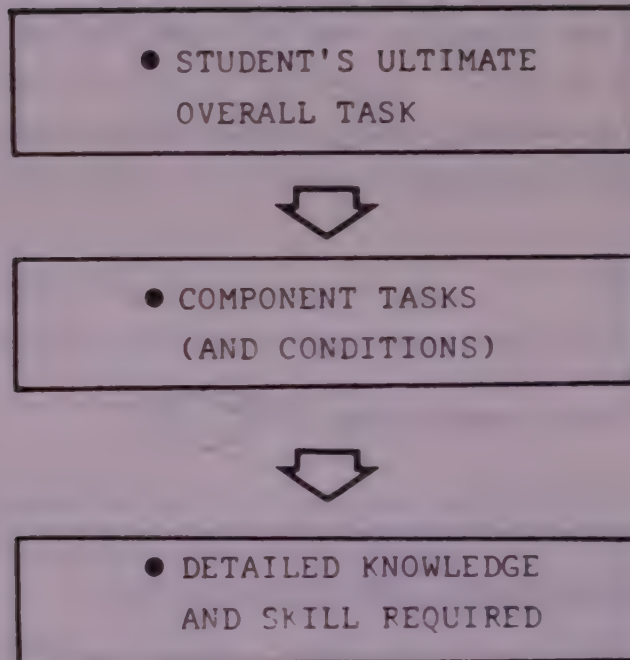
Well, you may have written something like:

<p><u>Grade II General Health Auxiliary</u> Supervises health clinic</p>
--

All very well, but what does 'supervising' entail?  
What sort of health clinic? What staff?  
In a remote rural area or in a city?

So try breaking down your general statement of what your student will be doing into its components. What tasks, for instance, does 'supervising' include? And specify the situation in which your student will be performing these tasks.

Try that now.





Detailing your Student's tasks.

When you broke down your student's overall task into its components, you may have written down something like this:

Tasks of Grade II General Health Auxiliary

Supervises health clinic (no doctor, 1 nurse, 1 general auxiliary) in remote rural community

- maintains appointments book for nurse
- controls stores
- performs all clinic's typing
- drives to health centre once a month to collect supplies
- attends to patients' minor injuries

Well, that gives a rather clearer picture of what your student will be doing, but it's going to have to be made more detailed in order to help you decide exactly what it is you're going to teach. So, break down the tasks a little further into their components of knowledge, skills and or possibly attitudes. For example, attending to minor injuries might involve -

- recognise minor abrasions: calls nurse if wound deep or bleeding is severe
- cleans wound
- disinfects wound
- selects bandage of correct width and length
- applies bandage securely
- reassures patient
- gives instructions for further treatment

TASKS

- delete those which students can perform already
- select the most important and critical tasks



- For each task selected, state what the student will be able to do as a result of your teaching. These are his LEARNING OBJECTIVES.



## Task Analysis to Objectives

If you do this analysis for all the jobs which your student is likely to be undertaking in his vocation, you will know in some detail what the student should be able to do at the end of your course. So what now? How does this actually help you with your teaching? Well, essentially it will relate your teaching very closely to the needs of the student, his abilities and interests. Once you know exactly what it is that your student is going to be doing, you are in a position to select those aspects which you should teach, and to organise them into a course. For each section of the course you should have clearly specified objectives, which indicate exactly what the student will be able to do as a result of your teaching at this point. These objectives will, put another way, indicate the expected outcome of your teaching.

Objectives will help you to organise your teaching, appraise its effectiveness and modify it. The students will benefit from its improved efficiency and effectiveness.

But how do you transform the 'tasks' into 'objectives'?

Examine your list of component tasks which the student is likely to need to perform.

Next, delete any tasks which the student is able to perform already.

Presumably you will not be able to teach all the remaining skills in your own course. Next, then, mark those items which would produce the most useful Health Auxiliary in the least amount of time, i.e., the most important and critical components. When doing this, bear in mind the time available for your course.

Then, for each of the marked tasks, list exactly what it is you the student is expected to be able to do at the end of the course with respect to that task. These will be his learning objectives.

OBJECTIVES state:

- what the student will be able to do as a result of his learning
- under what conditions
- at what level of performance



### What do objectives look like?

Objectives are clear, unequivocal statements of 'doing'. They describe the student's performance at the end of the course and the conditions under which the student will be able to operate. And, if appropriate, how well or quickly he will be able to do it.

For instance:

'given the normal range of self-adhesive bandages, cotton-wool and disinfectant, the student will, under accident conditions, be able to clean and bandage securely a minor wound - as described in your course - in under half a minute.'

Here is another example:

'immediately upon seeing an accident casualty whose breathing has ceased, the student will remove any debris or vomit from the casualty's mouth, together with any other obvious obstructions, thus assuring that the casualty's airway is clear. He will then commence emergency resuscitation....'

To repeat then, your objective must specify exactly what it is that your student will be doing when he has attained it. It must stipulate the conditions under which he will be performing and it will stipulate the level of performance which you require. Only when you have stated your objectives in this form will you ever be able to find out whether your students have learnt what you had hoped you were going to teach them.

Aim for as great a degree of precision as you possibly can.

- \* state the learning objectives and share them with the student
- \* teach your subject in a logical order



### 3: PLANNING YOUR TEACHING

Before deciding what exactly we do to tie the content of teaching to the objectives, let us just consider one or two principles which may help you to teach better. What can you do to your teaching to help students learn?

#### State the learning objectives and share them with your student

Both you and the student should know what is expected by the end of the course: i.e., you should have stated and explained the learning objectives at the outset. What is more, as your teaching will be dependent upon these objectives, the material which the individual student is learning at any given point must be relevant to the overall aims and objectives for the course as a whole.

In other words, all your teaching must be based on the final objectives for the course.

#### Teach your subject in a logical order.....

Always look for the logic inherent in your subject to guide the order in which you are going to teach it. For instance, in teaching artificial respiration, we must have a clear airway before we can commence artificial respiration and so it would be logical to teach 'clearing the airway' first.

It may often happen that, in a complex subject, you will need to teach the 'whole picture', before you come down to details. If you were to start with the details, your students might have no framework on which to hang the information you are giving them.

- \* remember what motivates your students
- \* challenge your students, but help them succeed.



....but remember what motivates your students

However, think about the motivation of your students. What sort of things interest them, excite them, or attract them? It may sometimes be necessary to go straight to the most interesting part of a subject first, to arouse student interest, before returning to a more logical teaching structure. Varying the strategies you adopt in your teaching will help to keep the interest you have stimulated. For example.....

Challenge your students, but help them succeed

Challenge your students to learn by, for instance, making them discover a principle from examples, rather than telling them about the principle first. Involve the student in the learning process. Try and encourage success and understanding in your teaching. Aim to teach in such a way and at such a level that the majority of your class get things right. In doing so, you will avoid antagonising and alienating students. Through the use of questioning - which we will be discussing in some detail later - ascertain the areas in which students are having difficulty, and take appropriate remedial action - immediately.

\* teach in short steps: obtain feedback

\* use appropriate teaching aids



### Teach in short steps: obtain feedback

Organise your teaching in short steps, readily assimilable by each student. At the end of each step, allow students to ask questions about the material you have just presented. You should also question the students, to check that they all understand what has been said. This is called 'feedback' and we'll discuss it in more detail in Section 5.

### Use appropriate teaching aids and situations

Remember that knowledge is acquired most easily by the student through his eyes, rather than his ears, and that most skills are acquired through 'doing'. Therefore, avoid just 'teaching by talking', try always to use illustrations and pictures, and use practical exercises as often as you can when teaching skills. Bearing this in mind, use 'visual aids' whenever these are likely to help, and plan the learning activities accordingly. (The whole subject of teaching aids is covered in Section 4).

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1. State the learning objectives and share them with the students
2. Teach in logical order...
3. ...but remember what motivates your students
4. Challenge your students, but help them succeed
5. Teach in short steps: obtain feedback
6. Use appropriate teaching aids/situations



## Planning your lessons

Now that you have objectives, specified in terms of what the student should be able to do, it is relatively easy for you to organise and list the knowledge and skills that you wish the students to learn or acquire in any lesson. But make sure that your facts are correct: the wrong facts taught well won't produce good health auxiliaries! And this is where the reference books in the package for teacher of health auxiliaries will help you.

When you're setting out to plan your lessons bear in mind the principles that we've been discussing: they are summarised opposite. In general, each lesson will have three identifiable sections: The introduction, the main body and the conclusion. Let's look at each of these.

### The Introduction

The introduction will aim to start the class thinking about the subject that you are going to teach them, and to motivate them to learn. Posing a problem can be a useful method to start a lesson. You can then, with your class, explore a number of alternative approaches to solving it, and consider their effectiveness, appropriateness, etc....

The introduction should include any preliminaries such as issuing materials and so forth, and also any necessary review to link up with previous teaching. It is imperative that the introduction should be brief, to the point, and stimulating. This will be where you gain the class's interest for the whole lesson - or lose it.

### Introduction

- Issue materials
- Necessary revision
- Motivation

### Main Body

- Information, in small steps
- Regular opportunities for questions
- Plan teaching aids and make contingency plans

### Conclusion

- Deal with difficult points
- Summarise
- Test
- Mention content/relevance of next lesson

### The main body of the lesson

The main body of the lesson will involve the teaching of the subject matter, in limited steps. You should plan exactly what your method of presentation will be including teaching aids. Make sure that any practical work which is to be included in the class is carefully organised. You should allow plenty of time for asking and answering questions. And always keep as much interest in the class as you can.

It is obviously impossible to plan a lesson down to the last 't'. Teachers should always make contingency plans; if a point is got across particularly quickly, you must have decided what to do in the 'extra' time available to you. To assist you when you actually give the lesson, you may find it helpful to mark in your own notes items which it is essential that you get across in the lesson, and items which, though of relevance to your objectives, are not essential for the students to know or understand at this particular moment in time.

### The conclusion.

In the conclusion of the lesson, you should aim to tie up any difficult points and summarise the main points of the lesson. If appropriate, you might also offer some sort of final practice or test, and you might mention what will be discussed in the next lesson, to stimulate interest.

However, in order to finish a lesson in a way which your students will find satisfying, you must be very clear indeed as to what precisely you will be doing within the last five minutes or so of the lesson. If you do not, the lesson will not end - it will disintegrate.



Why are aids needed?

- to illustrate
- to simplify
- to provide variation
- to provide opportunity for practice
- to summarise
- to provide opportunity for future reference



to improve the efficiency of your teaching

#### 4: IMPLEMENTING YOUR PLANS AND ILLUSTRATING YOUR TEACHING

This section will help you to decide how best to put across the content of your lesson plan, what tactics you will use. We will look at some of the more useful teaching aids, and consider how and when they should be made use of. First, however, let's think about them in more general terms.

##### Why do we need aids?

All over the world, teachers are using 'aids' of one sort or another: there is a wide range of such aids, including the blackboard, transparencies, tape recordings, film and television. But are they really necessary?

Well, no doubt there are some teachers who indulge in the use of teaching aids just for the fun of it, but there can be good reasons for using them. For teachers of health auxiliaries perhaps the most important reasons for using aids are the following:

- a) Many of your objectives will not easily be achieved solely by lecturing: so visual teaching aids can be used to illustrate your points.
- b) Visual teaching aids can be used to simplify teaching, particularly the teaching of difficult concepts (try describing what a spiral is without using a visual aid!)
- c) Teaching aids of all sorts can be used to make lessons more interesting, by providing variety.
- d) Some teaching aids, particularly models, can enable the student to practise skills which he is required to learn.
- e) Visual aids can enable you to summarise the main points of a lesson.
- f) Finally, carefully prepared teaching aids reproduced on paper can provide the student with reference material for use in his future work.

In short, aids can improve the efficiency of teaching.

THE "REAL THING"

MODELS

GROUP SITUATIONS

POSTERS

OVERHEAD PROJECTION

SLIDES

FILMSTRIP

TELEVISION

ETC.....



### What sort of aid? Some general thoughts

Before looking at individual teaching aids, is it possible to give any general guidance as to what sort of aid should be used, when? Well, when you're thinking about how to teach your lesson or a part of it and you think that a teaching aid might help you, ask yourself some questions:

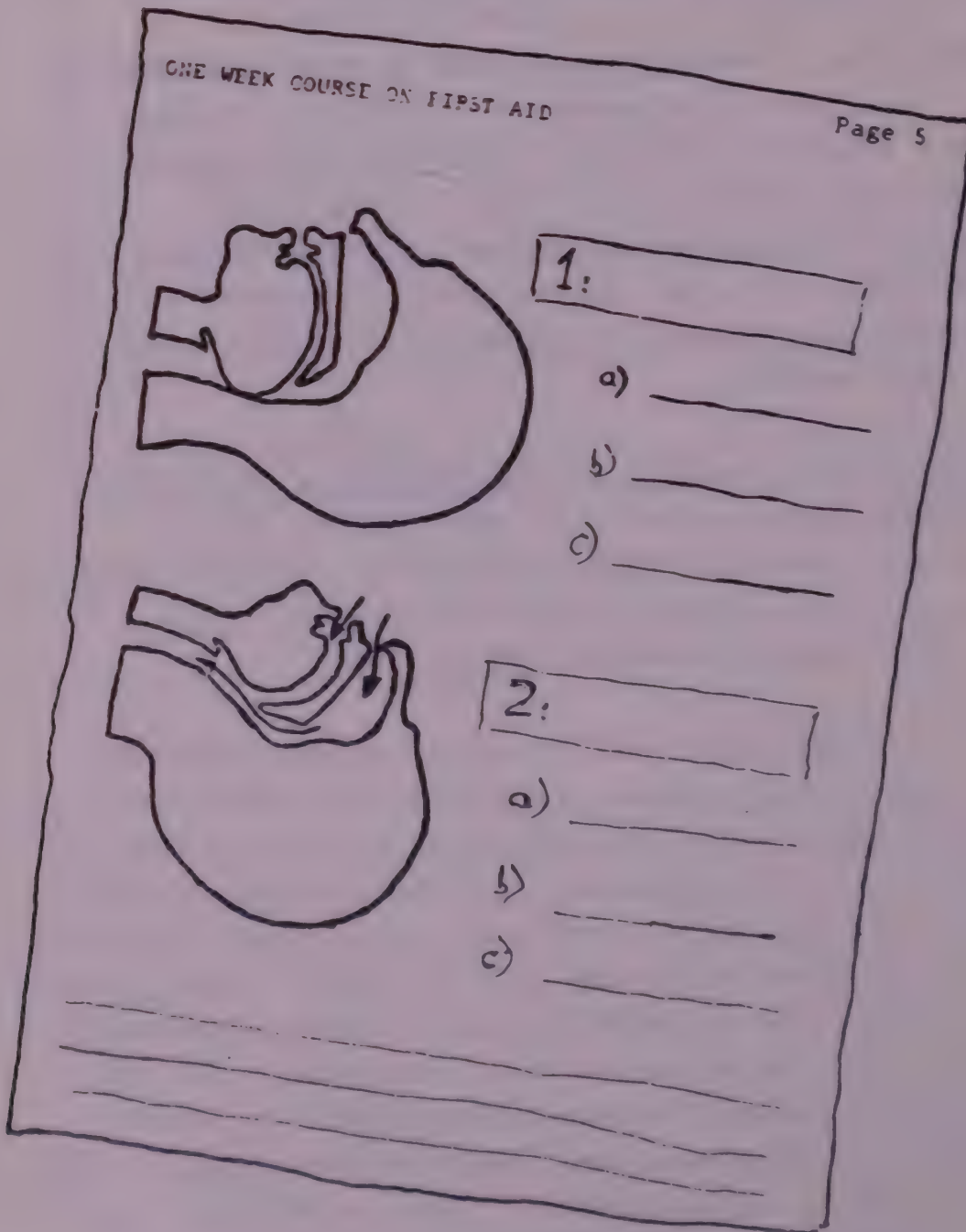
1. What is the primary purpose of using the aid? If the purpose is to illustrate, you may need a visual aid; if the purpose is to provide an opportunity for student practice, you may well need a model.
2. Do you need the 'real thing'? Or will a model do?  
In many teaching situations it may be both convenient and effective to use the 'real thing' to illustrate teaching. You might, for instance, explain the anatomy of the hand with the aid of both a diagram and your own (or a student's) real, live hand. But it may be inconvenient, confusing or impossible to use the real thing: we cannot provide a suitable 'real thing' to teach students how to diagnose cardiac arrest!
3. Do you need to depict motion? Some forms of teaching aids can be used to simulate motion: cine film, for example, can do this, as can some models. It is also possible to give the impression of motion using simpler visual aids, such as the overhead projector. However, the operative word in the question is 'need': it may be that the subject which you are attempting to teach involves the concept of movement. However, you must think very carefully indeed as to whether you yourself need to depict movement in your teaching in order to achieve your stated objectives.

- What is the primary purpose of using the aid?
- Do you need the 'real thing' or a model?
- Do you need to depict motion?
- Do you need colour?
- Is the aid going to be meaningful to your students?
- Is it likely to be helpful in achieving your objectives?
- Is it all worth it - in terms of time and money?

4. Do you need colour in your aids? Almost everything is coloured, but you must consider whether this is of relevance to the point which you are making. This is frequently very important in relation to the cost of aids which you might produce. On the other hand, though, the cost may be justified by the impact which colour can make.
5. Is the aid going to be meaningful to your students? This is just a reminder: you ought by now to have considered your students' background in some considerable detail. You must think again at this point, though, about your students' cultural background: is the aid which you are proposing to use familiar to them? It would be very unfortunate indeed if you produced a lot of visual aids, and subsequently discovered that your students were unable to recognise them in the way that you had intended.
6. Is it likely to be helpful in achieving your objectives? Use a little common sense. Is the teaching aid a sensible one, given the type of objective you are attempting to attain? For instance, if your subject is a visual subject, you should be using a visual aid.
7. Finally, is it all worth it? Consider briefly the time that you are likely to spend preparing this particular aid and the money which you are likely to have to spend producing it. If, in your own opinion, the use of this particular aid is likely to achieve only limited objectives it may not be worth utilising if it costs a great deal. And with respect to the time factor, you must of course try and spread the time which you have available to you for preparing your lessons, as evenly as possible over them: thus, desirable aids which are very time-consuming in their production may be impracticable. Bear in mind what is possible, reasonable and practicable.



Example of handout to which the teacher is going to speak, and which he expects the students to label and annotate.



## Aids to Teaching

In the second half of this section we'll go on to consider some of the more generally useful teaching aids in a little more detail. First, we'll look at a relatively simple type of aid - the handout.

### Handouts

Handouts are a particularly helpful aid for the student, because not only do they act as a visual aid in the teaching situation, but they also provide a useful source of reference for the student subsequently. Handouts can be designed to be used purely as a visual illustration of what the teacher is saying; but they can also be designed in such a way that the student also works with them, labelling them and writing notes on them, for example. A handout can also consist solely of printed information.

When designing a handout, you should reflect as to which of these uses you are intending it for. If you are simply providing the student with printed or written material for reference in the future, you should be particularly careful to space it out in reasonably small chunks, with good headings. If, on the other hand, the handout is to be one which contains an illustration, and space in which the student has to work - labelling, writing notes, etc., - then make sure that the space for the notes and labels is clearly provided.

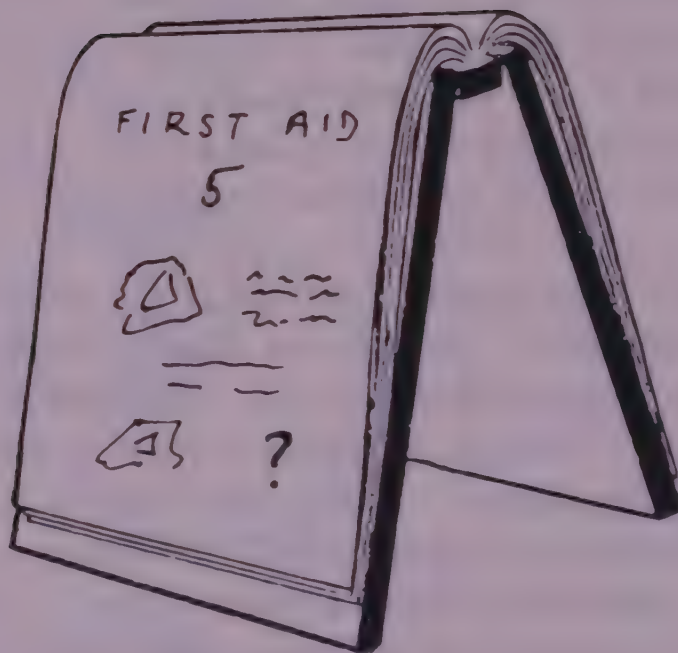
When designing a series of handouts use a standard size paper. Make sure that your pages are numbered, as this will help your student to use his final collection of handouts as a book of reference.

When preparing handouts which contain copies of drawings, generally the easiest way to produce these is by means of tracing. You can trace onto stencils by means of a light box, or even by sellotaping your stencil and original onto a window. However, if you have access to a photocopying machine, this can be used to produce a copy which will more closely resemble the original illustration.

Copies of handouts can then be made very conveniently on spirit duplicators, stencil duplicators or offset duplicators. However, in difficult circumstances, and provided that small lettering is not used, acceptable copies can be obtained by means of a "jelly duplicator".

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## A FLIP CHART





## Wallcharts and Posters

Wallcharts and posters are both aids which are particularly useful for displaying information or ideas on a permanent or temporary basis. Traditionallly, posters are carriers of a single simple message, and generally contain few words. Wallcharts, on the other hand, contain enough written information to explain their content and stand on their own.

Wallcharts and posters may be used to stimulate interest in a subject, or keep up a student's motivation. They may be used to provide a basis for a discussion, by providing ideas or information. They can also be used to provide background or advanced material, which an interested student might care to look at and take notes on, subsequent to the regular learning session.

Although wallcharts and posters are most frequently produced in quantity by a publisher or other organisation, you can prepare them quite simply yourself, particularly as you will normally need only one copy. Lettering should be big and clear, and care must be taken not to clutter the poster. Existing pictures may be transferred onto a poster either by tracing, by "cutting and sticking", or by projection with the episcopes (see page 38).

Posters and wallcharts have an advantage that they are easy for the teacher to colour, to dramatic effect.

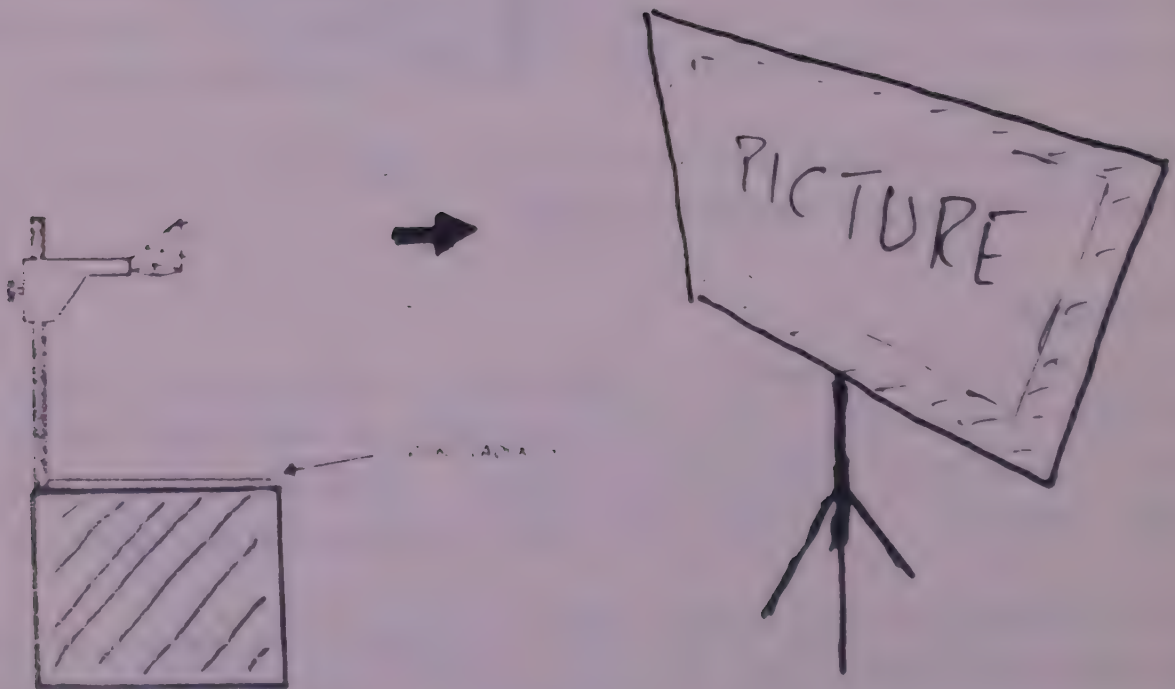
## Flip Charts

Flip charts are a convenient technique for sequencing a series of small posters or other paper illustrations so that they can be quickly shown in a predetermined order. They may of course also contain wording. A typical flip chart is illustrated opposite.

Flip charts may be very useful when projected aids cannot be used. They have the disadvantage that they have to be rather big to be useful with sizeable groups of students.

The illustrative material for flip charts is produced in exactly the same way as that for posters and wallcharts.

## AN OVERHEAD PROJECTOR





## The Overhead Projector (OHP)

Probably the most useful of all of the projection teaching aids is the overhead projector, commonly referred to as the OHP.

It is not only a highly versatile machine, in that materials can be prepared for it by a variety of methods, but it is also flexible in that it can be used in a number of different ways by teachers who need not be audio-visual experts.

The OHP is basically a daylight projector, which projects an image of a transparent sheet of up to 25 cms. square onto a screen of moderate size (typically 1.5 metres square). The screen is behind the teacher. Illustrations are drawn or written on a sheet of celluloid, glass or acetate (acetate is the most common material) which is then placed on the brightly illuminated stage of the projector.

Illustrations can be drawn very conveniently and easily on an acetate sheet with an ordinary hard grease pencil, but other, more expensive writing instruments such as felt tip pens may also be employed. However, in health auxiliary education, one of the most useful ways in which the OHP can be used is where the teacher produces a diagram or illustration on acetate before the lesson, and then subsequently draws on it, points to it and even colours it during the lesson. The original drawings may be prepared by tracing, preferably with a permanent ink so as not to smudge during the teaching period; drawings can also be transferred to the acetate sheet directly from a printed or handdrawn original by means of a photocopier or heat copier.

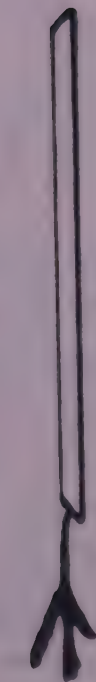
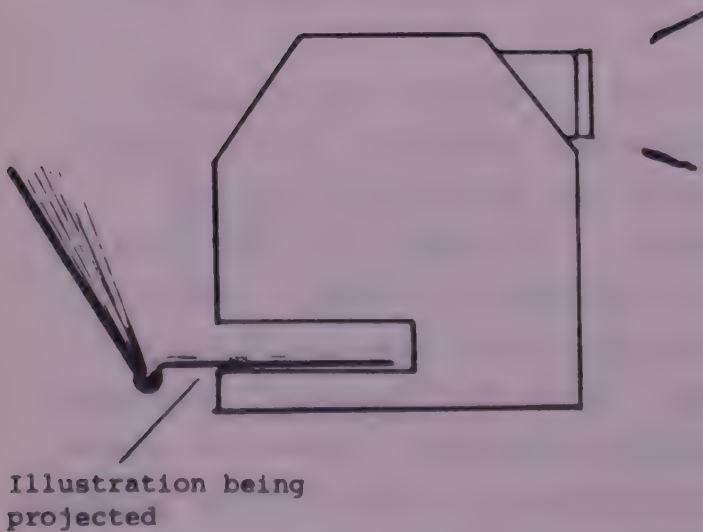
Many overhead projectors are fitted with a 'scroll' attachment; this consists of a long roll of transparent material, which serves as the writing surface, and two rollers for moving the writing surface across the bed of the projector. A number of illustrations can thus be pre-prepared, and kept in the correct order. Two other techniques which may be of particular use to you are the "uncover" technique and the "overlay" technique. With the "uncover" technique you start by covering the entire transparency with a sheet of paper; you can then uncover parts of the transparency as they become relevant to your talk. In the "overlay" technique, more and more acetate sheets can be laid one on top of the other to add labels, colour, annotations or further details.



### Main Advantages of OHP

- teacher faces audience
- room not darkened
- easy to manipulate
- materials relatively cheap, often re-useable
- versatile - use of colour, superimposition, etc.

### An Episcoper



Screen

You may sometimes find an overhead projector useful to project the outline images of three dimensional objects, by placing these on top of the projector. Overhead projector transparencies which you wish to preserve and use again should normally be mounted in cardboard frames with adhesive tape. They should be stored with care as they are easily scratched, if produced by hand.

Advantages of the overhead projector, generally, include the fact that you, the teacher, are facing your audience as you use it; that it is easy to use and manipulate, particularly as the room is not darkened; materials used with it are relatively cheap, and can frequently be re-used. It is a remarkably versatile instrument with respect to the ways in which it can be used. However, a good deal of practice is necessary before the teacher can become truly professional in using it, and really effective visuals for the OHP may need a good deal of preparation time.

### The Episcopa (opaque projector)

Another potentially useful teaching aid is the episcopa, sometimes called the opaque projector. This is a device for projecting images from opaque material, for example, illustrations in a book.

Whilst its main advantage is that it can be used to produce an image of virtually any illustration or drawing immediately, the episcopa is not able to project a very big picture with a high degree of illumination. However, the instrument's main disadvantage is that due to the rather dim picture, the room in which it is used must be kept in darkness.

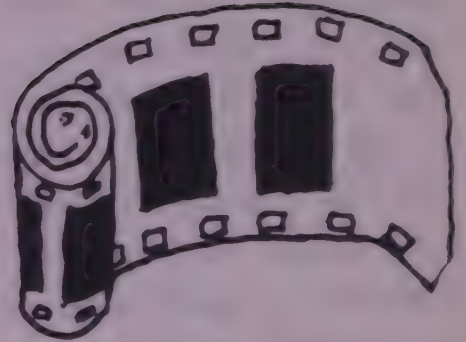
The major use of the episcopa is to produce enlargements: a small illustration from, say, a book is projected onto a large piece of paper pinned to a wall. The image can then be traced, in colour if desired, and may form the basis for a poster or a wallchart.



- SLIDES

appropriate if:

- \*few copies needed
- \*order may be changed



- FILMSTRIP

appropriate if:

- \*many copies required
- \*sequence fixed
- \*storage problem.



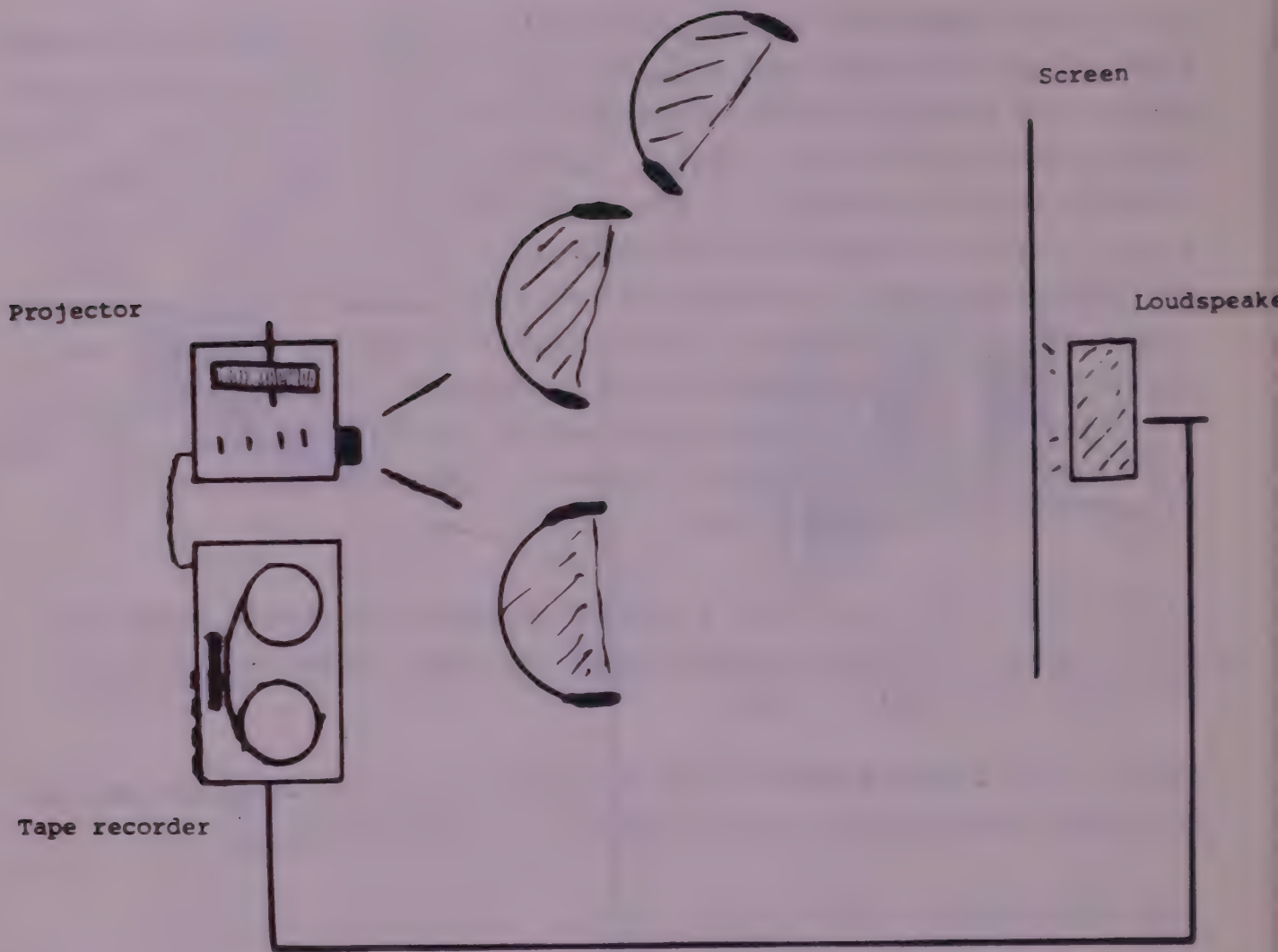
## Slides and Filmstrips

One of the commonest and most convenient ways of producing visuals from printed diagrams and illustrations is by means of 35mm photography, to produce either individual slides or filmstrips. Slides and filmstrips have the major advantage that they are compact, convenient and colourful. They can enable the teacher to produce a particularly professional presentation of his subject. They are also very easy to produce if you have access to a 35mm. camera and a processing facility, and of course virtually anything can be photographed and therefore can be used as illustrative material. But beware! If your slide has words on it which must be read, limit each slide to eight lines of letters. The cost of slides and filmstrips is relatively low.

Slides and filmstrips will probably require a darkened room for projection. This will depend upon the lamp intensity of the projector available to you.

Amongst the factors which will help you to decide which of the two you might use in any given situation are the following:

- a) the number of copies you will need. If you only need one to ten copies of your programme, then filmstrip will almost certainly be unsuitable. On the other hand, if a large number of copies are required, the use of filmstrip can lower costs considerably.
- b) whether you want to add or to change the sequence of the illustrations. If you will, then the use of filmstrip would be inappropriate. If you are likely to update the material, or use it with audiences of different academic levels, then again it would be unwise to opt for the filmstrip, where the sequence is fixed.
- c) whether you have a problem of storage. If you have a space problem, slides take up a lot more room than filmstrips. But you would have to have a tremendous number of slides before their bulk became a problem.
- d) the projection equipment available to you.



## Tape-Slide Presentations

A recent development in audio-visual techniques is the use of filmstrips and slides, coupled with tape recordings. These are sometimes called 'tape-slide' presentations, or 'sound filmstrips'. The tape recorder may contain instructions to you or your students as to when to turn to the next slide, or the tape recorder and projector may be connected together so that the slides are changed automatically.

The use of such tape-slide presentations has frequently been found to be particularly convenient when some students - but not the whole class - require 'remedial' instruction. They can also act as completely self-instructional units, freeing the teacher for other duties.

However, the experience of some teachers is that tape-slide presentations are not the most useful medium for simply transmitting information; but they can be particularly effective in stimulating interest, motivating students, or, particularly, presenting them with situations or events to provoke subsequent discussion ("problem solving exercises"). Tape-slide presentations designed to present such situations will normally be open-ended, presenting real life situations but leaving questions unanswered and problems raised. This can then encourage your students to discuss the problems, work out solutions and enables you to help them to select an appropriate answer.

If you need to produce a tape-slide programme yourself, plan it in great detail just as you would your lesson. Prepare a rough outline script, and collect all the pictures that you are going to use. Prepare your final script by talking to the pictures: that is, have the pictures in front of you as you write the final script. Do not let a slide stay on the screen for more than about half a minute, if possible. Talk naturally, not in a monotone, and vary your emphasis and pace.

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326, V Main, I Block  
Koramangala  
Bangalore-560034  
India



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● Use the "real thing" if:

- it is appropriate
- it is convenient
- it does not confuse

● Use a model if:

- the "real thing" would confuse, is not convenient, etc.
  - you wish to show the inside of the "real thing"
- 

Group discussions to practise problem solving

- 5 - 7 students
  - objectives made clear
  - direct discussion only if necessary
  - exercise control to encourage all to participate
-

### What about models or the "real thing"?

In some instances, it may be very convenient for you to use the "real thing" as an aid to teaching. However, often it is not convenient to use the real thing. You may also sometimes think that the real thing might in fact confuse the learner's understanding of your exposition.

In circumstances such as these, when a picture may also be either inappropriate or confusing, you may consider the use of a model to help you. Models can also be particularly helpful in explaining the inside of things (e.g. the body).

### Group discussions

The use of small groups in teaching has been used to achieve many objectives: it has been claimed that they can be used to 'train students to think' or to 'recognise and learn to apply principles'. However, you may find the use of group discussions most useful in connection with problem solving exercises. They are also particularly useful when used in conjunction with and following specially prepared learning materials - for example, tape-slide presentations - which are designed to simulate situations and provoke discussions.

Groups should ideally not be bigger than 5 to 7 students. The objectives of the group discussion should be made clear by you to the participants. Direct the discussion if it wanders from the topic, and summarise and question where necessary, but as a general rule let the students conduct the discussion themselves. Try and encourage all the students within the group to contribute, and control the argumentative, talkative and obstructive members of the group.

Do not be deceived by the smallness of a group into thinking that it is a simple and undemanding activity, it is essential that you are very well organised and prepared for it.

- speak clearly
- avoid monotony
- use emphasis
- demonstrate your own interest
- use aids effectively
- repeat important points
- ask questions



### Other aids

There are many other teaching aids available nowadays, many of which are complicated and expensive. These include film and television, for instance. These are complex media, with complicated advantages and disadvantages. Films, for instance, can achieve a large degree of realism and thus have immediate appeal and compel attention; they can be used for a variety of teaching situations, for example, to motivate or to teach skills; and they can make use of time-lapse photography (to give the appearance of speeding up events) and slow-motion photography (to make fast events appear slow). Unfortunately, many films are bad, and often they are used inexpertly by teachers - for instance, with the wrong level of student. They should always be carefully selected and introduced. They can often usefully be shown a second time, following a discussion. Also, don't forget that you do not have to use all of a film: you can show a part of it, for example to stimulate discussion.

However, it is not the purpose of this book to cover the use of these complex aids. So last of all let us simply consider that most important aid of all, you, the teacher. What can you do to make yourself into a more effective teaching aid? The following reminders may help:

- Speak clearly, audibly and reasonably slowly
- Do not drone: vary the tone of your voice
- Emphasise important words, phrases and sentences
- Let the students know of your interest in your subject (the use of brief personal anecdotes can underline this, and introduce an extra degree of realism into your teaching),
- Use aids as effectively as you can
- Use repetition - disguised if possible - to ensure understanding, particularly of important points
- Ask questions (we'll consider these in the next section)

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### Testing

- to help student
  - to assist teacher
-

5: HOW WELL DID YOU TEACH?

This section of the book is designed to give you some information on testing procedures. First of all remember that testing is not just something which is done in an examination hall at the end of a course. It can be used in a number of circumstances and for many reasons.

Testing may for instance, be designed to act as an incentive, to encourage students to work harder: it may be used in order to select students for some course of study. Again, testing may be used to license somebody to perform some vocation or profession. Testing may also be employed as one of a number of teaching methods: in this sense, it is employed to give feed-back to students.

Essentially, though, testing may be used primarily either to help the student or to assist the teacher. Let's look at these separately.



Testing can help students by

- motivating them
- giving them satisfaction
- directing their learning
- giving an understanding of their learning abilities

Testing can help the teacher

- show how well individual students are performing
- evaluate and improve his teaching

### How can Testing be used to help students?

Tests can be used to motivate students. Occasional or infrequent testing may place stress on students which encourages them to work particularly hard before a test. Thus, anticipation of a test can concentrate learning activity. On the other hand, periodic testing may motivate students more satisfactorily to work hard by providing them with regular and more reasonable short-term goals at which to aim.

Closely connected with this, testing can provide student satisfaction when the teacher gives immediate feed-back to the student as to the correctness of their answers.

Appropriately designed and constructed tests can help to direct student learning in a desired direction. This can be achieved when the test questions emphasise the objectives of the teaching.

In the longer term, frequent testing may give students some understanding of their own learning abilities. Through understanding the sorts of things which they learn easily and the things which they learn with greater difficulty, students may "learn how they learn". This can throw light on their prejudices, misconceptions and levels of ability in various areas.

### How can Testing help the teacher?

Basically, testing can indicate to the teacher how effective he is. Testing can tell the teacher not only which students did well and which did poorly, but it can also be used to indicate how well, as a group, a class are performing. A consideration of the results can enable a teacher to evaluate his learning objectives, his teaching, his materials or the learning situation as a whole.

He is thus in a position to improve his teaching.

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Informal testing**IN CLASS**

- put question to the class as a whole
- be clear and precise
- require a brief answer
- be encouraging and avoid embarrassment

**AFTER CLASS**

- did you achieve what you set out to achieve?
  - ought you to change anything about the way you teach?
-



### Informal Testing, as opposed to Examinations

In addition to obtaining figures, grades and percentages, it is important that teachers get informal views on their teaching. At the most basic level, you must ask questions in class, in order to assess the difficulties of individuals and the class as a whole, and to correct them if necessary. How is this 'feedback' best achieved?

Well, first of all make sure that your questions are relevant, related to your objectives. When you ask questions, put them to the class as a whole, unless you are deliberately asking one person. Make sure that your questions are clear and precise. As far as you can, ask questions to which an unequivocal and fairly brief answer may be given. Try to make sure that you are not testing a student's power of expression, but rather the subject matter.

When dealing with replies to your questions, be encouraging. Avoid being distracted. But above all, avoid making your students embarrassed.

The next level of informal testing takes place immediately following a class. Ask yourself some questions:

- Do you think you achieved what you set out to achieve?
- Did you allow enough time for providing feed-back?
- Did you try to spread your time fairly amongst the members of the class, and not concentrating too much on the more vocal members?
- Do you think you should change what you are teaching or how you do it on the basis of your experience with your class today?

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### Practical Tests

- Use where subject is essentially a practical one
- Ensure the task requested is relevant to objectives of course
- Ensure the task can be performed in the time allowed.

### Oral Tests

- Can be used to probe a student's knowledge in depth
- May be embarrassing for the student
- Unreliable.

## Testing with 'Real Tests': Examinations.

Real tests can be divided into four basic categories:

1. Practical tests
2. Oral tests
3. Written tests with long answers
4. Written tests with short answers (including multiple choice)

### Practical Tests

Practical tests where a student is asked to demonstrate his proficiency in some skill or technique, are obviously particularly useful and relevant when the subject they are studying is essentially a practical one.

However, two mistakes are often made in practical testing. The first is that students are asked to perform tests or procedures which are not appropriate to the objectives of the course. Second, examiners often demand too much of students in the time available in practical examinations. So, make sure that your practical test is testing your own stated objectives, and that what you ask for is reasonable to expect in the time allowed. Remember that a student will not perform a task which he has learned recently as quickly as you expect - especially under examination conditions.

### Oral Tests

Oral examinations have the advantage that they enable the examiner to interrogate and question the student about his answers and to probe his knowledge deeply. However, they have been proven to be confusing and embarrassing to the student. In any case, the apparent 'knowledge' of a student may depend largely on his confidence in himself or other factors quite unrelated to the qualities you want to test. It is particularly difficult to give objective marks to a candidate in an oral test, marks unbiased by personal feelings. In other words, oral tests are unreliable devices.



Written tests with long answers

- Useful for testing depth of knowledge
- Time-consuming if a wide spread of knowledge is to be tested
- Difficult to mark fairly

Short Answer Written Tests

- Time-consuming to set
- Can test a wide range of material quickly
- Quickly, easily and fairly marked

### Written tests with long answers : Essay tests.

Long answer written tests may be of particular value when you want to assess the extent to which a student can express himself, or if you are particularly interested in the depth rather than the breadth of his knowledge. They are therefore of particular value in the more 'academic' subjects. Whilst they can seem easy to correct, they are really particularly difficult to do so with any degree of fairness.

### Written Tests with Short Answers

Short answer tests include:

- tests with one word answers;
- tests where the student is asked to complete a statement;
- true/false tests where a student is simply asked to indicate whether statements are true or false;
- multiple choice tests where a question (or incomplete statement) is followed by a number of possible alternative answers.

These tests can provide a series of precise problems which can be clearly stated and quickly and unequivocally answered. They can thus be related precisely to specific learning objectives. They can be quickly and fairly marked, not necessarily by a teacher or subject-matter expert. However, they are difficult and time consuming to construct, particularly when you want to test a broad spectrum of knowledge. On balance though, these questions are likely to be of greatest use to you. The use of them can increase the range and variety of teaching material tested, when compared in terms of time with essay questions.

Example of a "one-from-five" MCQ.

You are walking home from work one day when you discover a man of about 50, lying just inside a gateway, and beside a car. You note that he is grey in colour and you cannot feel his carotid pulse. He does not appear to be breathing. Which of the following would you do first?

- a) Wait five minutes before doing anything, to see if he recovers.
- b) Remove him to his house.
- c) Commence external heart compression.
- d) Strike his chest sharply with your hand at the lower part of the breastbone.
- e) Position the man on his left side so that he does not inhale his vomit.

("d" is correct)

Example of an "intermediate" question

Which of the following statements are true about mouth-to-mouth artificial respiration?

- a) In most situations it is to be preferred to other methods of artificial respiration.
- b) The casualty's neck should be in the flexed position with chin on the breastbone.
- c) It is important to pinch the casualty's nostrils.
- d) You should maintain a tight seal with your lips round the casualty's mouth for at least 10 breaths without removing your mouth.
- e) It is essential to remove the casualty's dentures before commencing artificial respiration.

("a" and "c" only are correct)



### Some useful types of short answer questions

Recently a lot of interest has been shown in this type of 'objective' short answer question. As indicated on the last page there are many versions of these, but the most useful to you may be the 'one-from-five' multiple-choice question (MCQ) and the 'indeterminate' question.

In the 'one-from-five' MCQ, the candidate is given five answers to a question or statement, only one of which is correct. He is required to tick or circle the correct answer.

In the 'indeterminate' question, the question is followed by between three and six statements or answers. Any, all or none of these may be correct. Again, the student is asked to tick or circle the correct one. This type has the advantage that the teacher does not have to invent four spurious 'incorrect' answers for each correct item being listed.

Have a look at the examples opposite.

### Marking these questions

'One-from-five' MCQ tests:

- |  |            |
|--|------------|
| ● Questions in which student has ticked the one correct alternative only | - ONE MARK |
| ● Questions in which student has not ticked any alternative              | } NO MARK  |
| ● Questions in which student has ticked more than one alternative        |            |
| ● Questions in which student has ticked one alternative, the wrong one   |            |

Note here that a student with no knowledge of the subject who guessed all the answers would, on average, obtain a mark of 20% on the examination.

'Indeterminate' tests:

- Each correct item or statement ticked - ONE MARK
- Each incorrect item or statement ticked - TAKE AWAY ONE MARK
- Items or statement which have not been ticked - NO MARK

\* Ensure that the test is relevant to

- your objectives

- the student's interests

\* Use appropriate testing methods

\* Write as many questions as you need

\* When writing questions

- be concise

- be unambiguous

## Writing Test Questions

Start from your objectives. When you are thinking about the design and construction of a test, make sure that it is testing your objectives. For each question you write, ask yourself -

- Is it relevant and meaningful to the student?
- Is it relevant to your objectives?

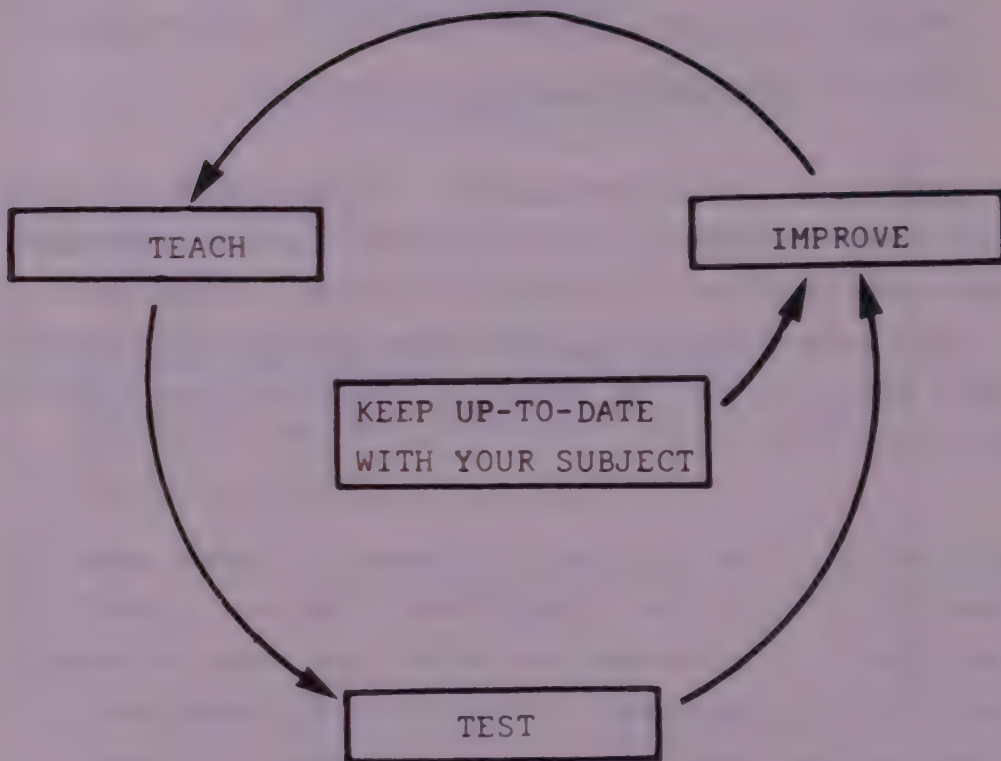
When writing questions, avoid ambiguity. Your questions must be meaningful to the students, and they must also be relevant to them. Make sure that your question is brief, clear and to the point. When composing multiple-choice or multiple-completion questions, make sure, as far as possible, that neither right nor wrong answers stand out.

Write as many questions as you need in order to cover your objectives completely (you can always weed some out later). Make sure that the sort of behaviour which you require from your students in your objectives is the sort of behaviour you are testing in the questions. For instance, if your objectives are practical ones, use questions about practical situations. If your objectives are theoretical, use questions about the theory. Objectives which require deep understanding of a problem call for test questions which demonstrate a deep understanding of the problem, and not for snippets of incidental factual information concerning it.

Spend as much time as you need writing questions.

It is time well spent.





## 6: CONCLUSION

Your tests may indicate that areas of your teaching are weak and ineffective. So you try to rectify matters, selecting new teaching strategies, more appropriate teaching aids. You improve your teaching. Is that all you need to do?

No. Always remember that teaching is not a stationary process, and that testing, which also checks on teaching, should also not be static. Checking on the appropriateness of the objectives of your teaching is essential. New techniques are introduced, new drugs are invented and so on. Changes such as these will lead to changes in the tasks carried out by Health Auxiliaries. So make sure that your objectives are kept under review. Unless you are in close personal touch with the tasks for which you are training people, make efforts to keep in touch by other means - reading, for example. Find out about changes in what is expected of your students. If you can, go out and work as one of them for a while from time to time, because, as you will I hope by now agree, no teaching is worth anything at all unless it is based on a close understanding and knowledge of precisely what is expected of students at the end of it.

If you would like to read a little further into the subject, the following books may interest you. Each of these is compact, full of practical help and very readable.

- DEVELOPING VOCATIONAL INSTRUCTION by R F Mager and K M Beach; published in 1967 by Fearon Inc., Palo Alto, California, U.S.A.
- THE SELECTION AND USE OF TEACHING AIDS by A J Romiszowski; published in 1968 by Kogan Page, London, England
- AUDIOVISUAL AIDS AND TECHNIQUES IN MANAGERIAL AND SUPERVISORY TRAINING by R P Rigg; published in 1969 by Hamish Hamilton, London, England
- CONSTRUCTING ACHIEVEMENT TESTS by N E Gronlund; published in 1968 by Prentice Hall Inc., Englewood Cliffs, New Jersey, U.S.A.
- PRACTICAL NURSING EXAMINATION REVIEW BOOK; published by the Medical Examination Publishing Company Inc., New York, U.S.A.



your course and objectives that focus on your teaching and learning and assessment. In your day to day teaching, selecting one teaching strategy, more appropriate teaching aids. To improve your teaching. It that all you need to do.

Always remember that teaching is not a static process, and that teaching, which also means on teaching, should also not be static. Checking on the effectiveness of the objectives of your teaching is essential. New drugs and theories are lead to changes in the way we teach and the way we are taught. You are in close contact with the people, both by other means - teaching, for example. Find out about changes in what is expected of your students. If you can, go out and meet some of them for a while from time to time, because, as you will find, they now agree, no teaching is worth anything at all unless it is based on a close understanding and knowledge of previously what is expected of students at the end of it.

**COMMUNITY HEALTH CELL**  
**326, V Main, I Block**  
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- **THE TEACHING AND USE OF TEACHING AIDS** by A. J. Hargrave. Published in 1985 by Roger Tate, London, England.
- **TEACHING AIDS AND TECHNIQUES IN MANAGERIAL AND SUPERVISORY TRAINING** by E. F. Hager. Published in 1985 by Harper Hamilton, London, England.
- **CONSTRUCTIVE LEARNING** by N. E. Grossman. Published in 1985 by Praeger Hall Inc., Englewood Cliffs, New Jersey, U.S.A.
- **PRACTICAL WORKING EXAMINATION EVALUATION** by the Medical Examination Publishing Company Inc., New York, U.S.A.





